

WE CLAIM:

1. A sterile dialysis concentrate composition for use in a dialysis solution comprising sodium chloride (NaCl) 90.72 ± 9.0 g/l, magnesium chloride (MgCl₂) 2.05 ± 0.2 g/l, and sodium bicarbonate (NaHCO₃) 28.35 ± 2.8 g/l.
2. A kit for preparing a dialysis solution comprising the sterile dialysis concentrate composition of claim 1 and optionally instructions for its use.
3. The kit of claim 2 further comprising sterile water sufficient to dilute the concentrate to a solution comprising Na 140 ± 14 mmol/l, Mg 0.75 ± 0.07 mmol/l, Cl 116.5 ± 11 mmol/l, and HCO₃ 25.0 ± 2.5 mmol/l.
4. A method of preparing a sterile dialysis solution comprising diluting a sterile, dialysis concentrate composition of claim 1 in a sufficient amount of sterile water to prepare a dialysis solution comprising Na 140 ± 14 mmol/l, Mg 0.75 ± 0.07 mmol/l, Cl 116.5 ± 11 mmol/l, and HCO₃ 25.0 ± 2.5 mmol/l.
5. A method for providing continuous renal replacement therapy to a patient comprising administering a sterile dialysis solution prepared according to the method of claim 4 in conjunction with a regional citrate anti-coagulant solution to a patient in need thereof.
6. A method of preparing a sterile infusate comprising diluting a sterile, dialysis concentrate composition of claim 1 in a sufficient amount of sterile water to prepare an infusate comprising Na 140 ± 14 mmol/l, Mg 0.75 ± 0.07 mmol/l, Cl 116.5 ± 11 mmol/l, and HCO₃ 25.0 ± 2.5 mmol/l.
7. A method for treating acute renal failure in a critically ill patient without introducing calcium into the blood removed from the patient during dialysis comprising administering a sterile dialysis solution prepared according to the

method of claim 6 in conjunction with a regional citrate anti-coagulant solution to a patient in need thereof.

8. A method for providing hemofiltration to a patient comprising administering a sterile infusate prepared according to the method of claim 6 in conjunction with a regional citrate anti-coagulant solution to a patient in need thereof.
9. A sterile dialysis solution comprising the concentrate as claimed in claim 1 and a physiologically acceptable diluent.
10. A sterile dialysis solution according to claim 9 comprising Na 140 ± 14 mmol/l, Mg 0.75 ± 0.07 mmol/l, Cl 116.5 ± 11 mmol/l, and HCO_3^- 25.0 ± 2.5 mmol/l.
11. A use of a sterile calcium-free bicarbonate concentrate according to claim 1 for preparing an infusate for hemofiltration.
12. A use of a sterile, calcium free bicarbonate concentrate according to claim 1 for preparing a dialysis solution for use in metabolic acidosis.